

appeared the same; this change corresponded to a decrease of size of the preceding spot. On May 28 the C line was reversed on several places in the vicinity of this spot, and several dark absorbing spots were seen projected on both sides of the C line.

It is seen from these observations that on several occasions the dark spots seen on and about the C line preceded by a few hours or even days the opening of sunspots, as if they were, like the faculæ, the precursors of solar spots. The fact that these dark spectral spots were observed in every case in the vicinity of solar spots in full activity, or upon the very umbræ of such spots, is sufficient, it seems, to prove that absorbing vapours, just as well as intensely luminous gases, are ejected from the interior of the Sun through the opening of the solar spots, even if the direct observations had not shown these vapours issuing from the spots and moving away from them on the surface of the Sun.

Cambridge, U.S., January 12, 1879.

*Ephemeris for Physical Observations of Jupiter*, 1879. By A. Marth, Esq.

G.M.T.	Angle of Position of J's Axis.	Longitude of J's Meridian directed to the Earth. Diff.	Latitude of Earth   Sun above J's Equator.		Annual Parallax.	Equat. Diam.	Greatest Phase.	Corr. of Long.	
	°	°	°	°	°	"	"	°	
1879. ay 20	335°63	145°66	4352°80	+ 1°12	+ 0°71	- 11°43	38°30	0°380	+ 0°57
25	335°56	178°46		1°16	0°73	11°57	38°89	°396	°58
30	335°49	211°32		1°20	0°75	11°65	39°50	°407	°59
			2°93						
ine 4	335°44	244°25	4353°00	+ 1°24	+ 0°78	- 11°67	40°13	°415	+ 0°59
9	335°39	277°25		1°28	0°80	11°61	40°78	°417	°59
14	335°36	310°32		1°32	0°82	11°48	41°45	°415	°57
			3°14						
19	335°33	343°46	3°21	1°35	0°85	11°28	42°13	°406	°55
24	335°31	16°67		1°38	0°87	10°99	42°81	°393	°53
29	335°30	49°94		1°41	0°89	10°63	43°50	°373	°49
			3°34						
uly 4	335°30	83°28	4353°41	+ 1°43	+ 0°92	- 10°19	44°18	°348	+ 0°45
9	335°31	116°69		1°46	0°94	9°66	44°85	°311	°40
14	335°32	150°16		1°48	0°96	9°06	45°50	°284	°36
			3°47						
19	335°34	183°69	3°53	1°49	0°98	8°37	46°13	°246	°31
24	335°38	217°27		1°50	1°01	7°61	46°72	°206	°25
29	335°42	250°90		1°51	1°03	6°78	47°26	°165	°20
			3°58						
			3°63						
			3°66						

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G.M.T.	Angle of Position of J's Axis.	Longitude of J's Meridian directed to the Earth. Diff.	Latitude of Earth   Sun above J's Equator.		Annual Parallax.	Equat. Diam.	Greatest Phase.	Corr. of Long.	
1879.	°	°	°	°	°	"	"	°	
Aug.	3	335°47	284°56	+ 1°51	+ 1°05	- 5°88	47°75	°126	+ 0°15
	8	335°53	318°25	1°51	1°07	4°92	48°17	°089	°11
	13	335°59	351°96	1°51	1°10	3°91	48°53	°056	°07
	18	335°67	25°68	1°50	1°12	2°86	48°80	°030	°04
	23	335°75	59°39	1°49	1°14	1°78	48°99	°012	+ °01
	28	335°83	93°08	1°47	1°16	- 0°68	49°09	°002	°00
			3°66						
Sept.	2	335°92	126°74	+ 1°45	+ 1°19	+ 0°43	49°10	°001	°00
	7	336°01	160°36	1°43	1°21	1°54	49°02	°009	- °01
	12	336°11	193°93	1°41	1°23	2°63	48°84	°026	°03
	17	336°20	227°43	1°39	1°25	3°69	48°58	°050	°06
	22	336°29	260°86	1°36	1°28	4°71	48°24	°081	°10
	27	336°37	294°20	1°33	1°30	5°68	47°82	°117	°14
			3°25						
Oct.	2	336°44	327°45	+ 1°31	+ 1°32	+ 6°59	47°34	°155	- 0°19
	7	336°51	0°60	1°28	1°34	7°43	46°80	°196	°24
	12	336°56	33°65	1°26	1°36	8°20	46°21	°236	°29
	17	336°61	66°60	1°24	1°38	8°89	45°58	°274	°34
	22	336°64	99°44	1°22	1°41	9°50	44°92	°308	°39
	27	336°65	132°18	1°20	1°43	10°03	44°25	°338	°44
			2°63						
Nov.	1	336°65	164°81	+ 1°18	+ 1°45	+ 10°47	43°56	°363	- 0°48
	6	336°63	197°35	1°17	1°47	10°82	42°86	°382	°51
	11	336°60	229°80	1°16	1°49	11°10	42°17	°394	°54
	16	336°56	262°15	1°16	1°51	11°29	41°48	°401	°55
	21	336°50	294°41	1°15	1°53	11°40	40°81	°403	°57
	26	336°43	326°60	1°15	1°55	11°43	40°15	°398	°57
			2°11						
Dec.	1	336°36	358°71	+ 1°15	+ 1°58	+ 11°39	39°51	°389	- 0°56
	6	336°27	30°76	1°16	1°60	11°28	38°90	°376	°55
			1°98						

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G.M.T.	Angle of Position of $\Upsilon$ 's Axis.	Longitude of $\Upsilon$ 's Meridian directed to the Earth. Diff.	Latitude of Earth   Sun above $\Upsilon$ 's Equator.		Annual Parallax.	Equat. Diam.	Greatest Phase.	Corr. of Long.
1879.	°	°	°	°	°	"	"	°
Dec. 11	336°17	62°74	1°17	1°62	11°10	38°31	°358	°54
		1°92						
16	336°07	94°66	1°18	1°64	10°86	37°75	°339	°51
		1°88						
21	335°96	126°54	1°20	1°66	10°56	37°22	°315	°49
		1°83						
26	335°85	158°37	1°22	1°68	10°21	36°72	°291	°45
		1°80						
31	335°74	190°17	1°24	1°70	9°80	36°25	°264	°42
		4351°76						
1880.								
Jan. 5	335°63	221°93	+ 1°26	+ 1°72	+ 9°35	35°81	0°238	- 0°38

Assumed daily rate of rotation 870°·60. The “annual parallax” is the difference of the Jovicentric longitudes of the Sun and the Earth, reckoned in the plane of *Jupiter’s* equator. The last column gives the correction which is to be applied to the “longitude of  $\Upsilon$ ’s meridian directed to the Earth,” in order that it may refer to the meridian which bisects the illuminated disk.

The inclinations  $\gamma$  and the ascending nodes  $\Gamma$  of the orbits of the four satellites in reference to the plane of *Jupiter’s* equator are the following, the nodes being reckoned from the descending node of the equator on the planet’s orbit, or from the vernal equinox of *Jupiter’s* northern hemisphere:—

	Sat. I.		Sat. II.		Sat. III.		Sat. IV.	
	$\gamma_1$	$\Gamma_1$	$\gamma_2$	$\Gamma_2$	$\gamma_3$	$\Gamma_3$	$\gamma_4$	$\Gamma_4$
1879.								
Feb. 19	0°0097	17°3	0°4597	25°27	0°1908	263°20	0°3246	329°61
April 20	°0097	14·8	°4605	23°25	°1902	267°77	°3249	329°54
June 19	°0098	12·5	°4614	21°23	°1896	267°38	°3253	329°49
Aug. 18	°0099	10·1	°4624	19°21	°1890	267°00	°3257	329°45
Oct. 17	°0100	7·9	°4634	17°20	°1883	266°64	°3262	329°44
Dec. 26	0°0102	5·7	0°4644	15°19	0°1876	266°30	0°3267	329°46

*On the Desirability of photographing Saturn and Mars at the next Conjunction.* By A. A. Common, Esq.

In the December 1878 Number of the *Notices* of this Society the particulars of the conjunction of *Saturn* and *Mars* on June 30, 1879, are given by the Astronomer Royal.

I trust that those astronomers who can will take advantage of this excellent opportunity of testing the relative actinic intensity of light of the two planets.

As they can then be taken under the same conditions, and if differently prepared plates are used—that is the ordinary wet plate and iodised collodion, and those dry plates that are more

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